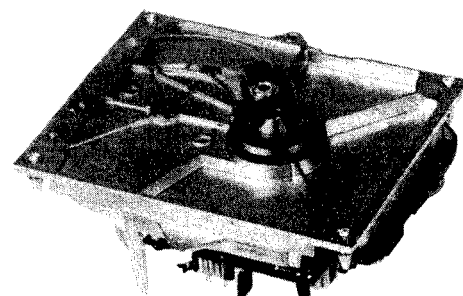


Service  
Service  
Service



V23997



35 367 A

# Service Manual

For reasons of production, several versions of the C.D. mechanism have been applied.

The C.D. mechanisms are in most cases marked with a round, yellow sticker provided with a letter impression.

The Table below indicates which exploded view and which HF pre-amplifier/laser supply PCB should be consulted.

**COMPACT**  
**disc**  
**DIGITAL AUDIO**

| Sticker C.D.M. | Exploded view drawing    | H.F. Pre-amp.+laser supply PCB +circuit diagram |
|----------------|--------------------------|-------------------------------------------------|
| Absent         | A                        | I                                               |
| A              | See Service Manual CDM-0 | See Service Manual CDM-0                        |
| B              | See Service Manual CDM-0 | See Service Manual CDM-0                        |
| C              | A                        | II                                              |
| D              | A                        | I                                               |
| E              | See Service Manual CDM-0 | See Service Manual CDM-0                        |
| F              | See Service Manual CDM-0 | See Service Manual CDM-0                        |
| G              | A                        | II                                              |
| H              | A                        | II                                              |

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

**CLASS 1**  
**LASER PRODUCT**

3122 110 034 20

## SERVICING HINTS

In order to prevent loose metal objects from getting in the CD mechanism it will be necessary to see to a clean repair station.

The objective can be cleaned with a blow brush.

**The CD-mechanism is provided with self-lubricating bearings and should thus NOT be lubricated.**

**Ensure that the player is not resting on the shaft of the turntable motor during repairs and measurements on the bottom.**

**Servicing the RAFOC unit (= Radial and Focusing unit pos. 61).**

The RAFOC unit supplied by Service is the same one as in CDM-0. In the CDM-1 the bottom plate of this RAFOC unit has been replaced by frame item number 503. If the RAFOC unit is replaced, **carefully** an accurately perform the following operations:

- Take the two flex PCBs out of the connectors on the preamplifier PCB.
- Disassemble the **defective** RAFOC unit by removing the 4 bolts M3x18 mm and shaft item number 504.
- Remove shaft item number 504 of the new RAFOC unit.  
Pay attention to the 3 intermediate washers item number 502 and spring washer item number 505, they should assume the same positions after assembly.

Loosen the 4 bolts M3x18 mm until the bottom plate can be removed.

Do not remove bolts M3x18 mm (they hold the new RAFOC unit together).

- Mount the new RAFOC unit on frame 503.  
Ensure that the 3 intermediate washers 502 and spring washer 505 are positioned correctly before fixing shaft item number 504.
- Check that the arm moves freely and the angle setting as well (see check and possible adjustment of angle setting).
- For replacing the light pin it is not necessary to remove the RAFOC unit.

The light pin can be removed by turning it anti-clockwise by means of an open-ended spanner of 12 mm and afterwards pulling it out of the arm.

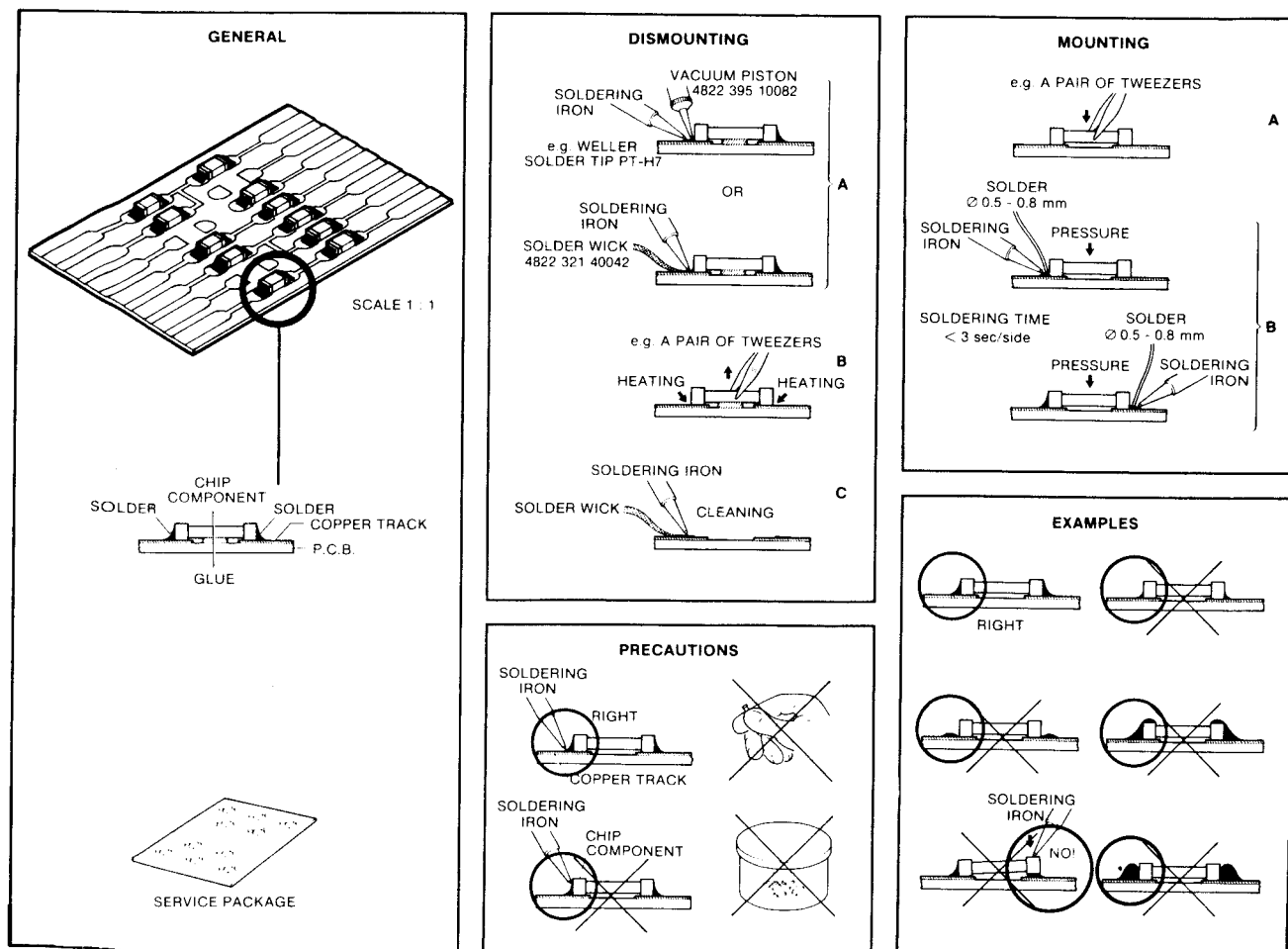
During mounting, the light pin must be pushed into the arm as far as possible, and turned clockwise.

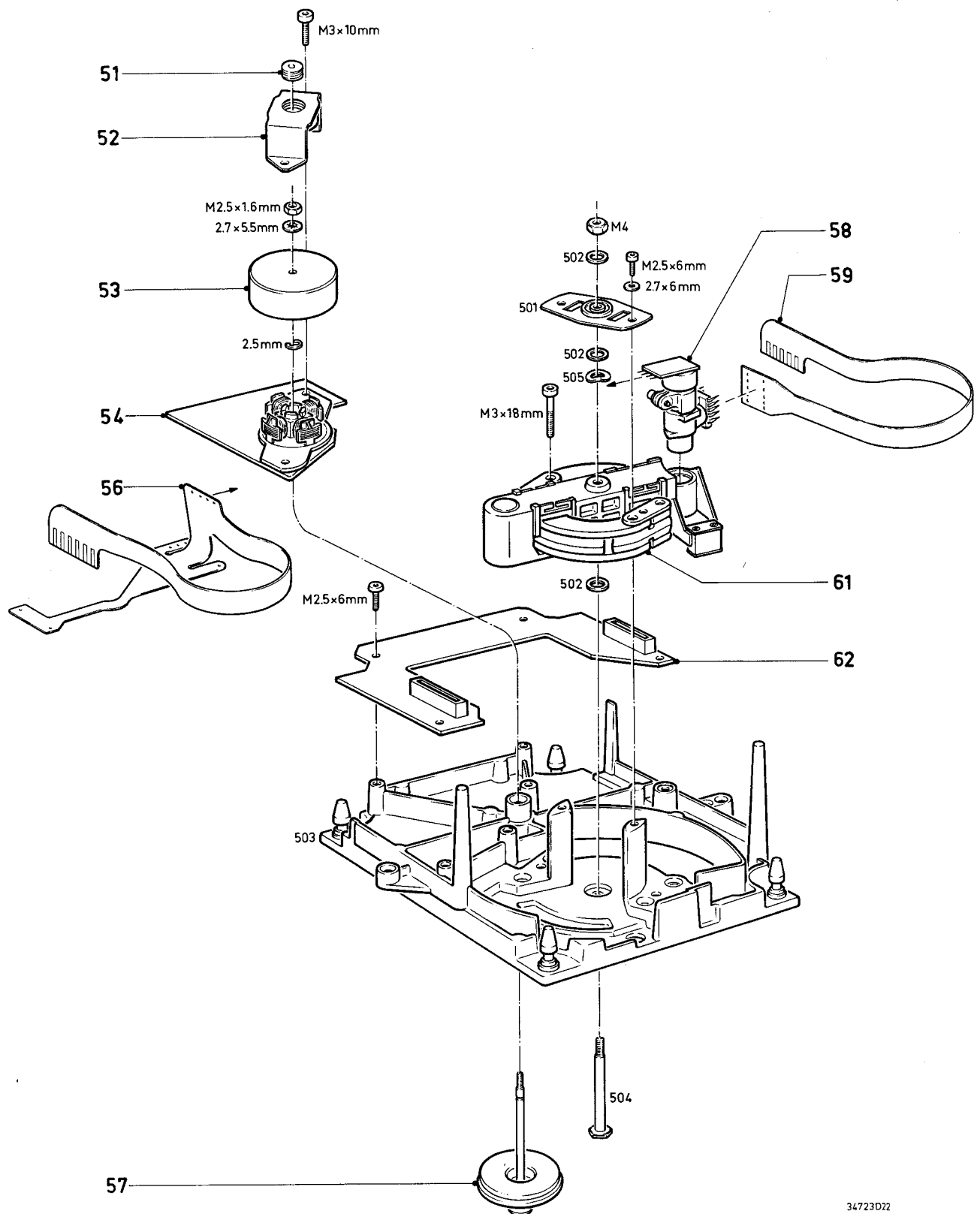
### Attention:

**To prevent adjustments from changing, NO SCREWS OTHER than those mentioned above should be loosened.**

**THE LIGHT PIN IS MUCH MORE SENSITIVE TO STATIC CHARGE THAN A MOS IC. CARELESS TREATMENT DURING SERVICING MAY REDUCE LIFE EXPECTANCY DRASTICALLY. FOR THIS REASON CARE SHOULD BE TAKEN THAT DURING SERVICING THE POTENTIALS OF THE AIDS AND YOURSELF EQUAL THE POTENTIAL OF THE MECHANISM.**

In the player chip components have been applied. For insertion and removal of chip components see Fig.





34723D22

|       |                |
|-------|----------------|
| 51    | 4822 502 11701 |
| 52    | 4822 520 10529 |
| 53    | 4822 362 20225 |
| 54    | 4822 214 50395 |
| 56    | 4822 322 40051 |
| 57    | 4822 528 10491 |
| 58+59 | 4822 691 30129 |
| 59    | 4822 322 40048 |
| 61    | 4822 691 30128 |
| 62    | 4822 214 50394 |

## MECHANICAL MEASUREMENTS AND ADJUSTMENTS

### Height setting of the turntable

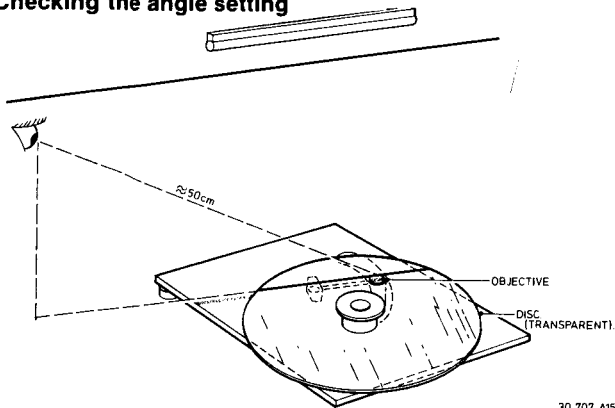
For this alignment the unit should be in the position of normal end use. The servicing supports 4822 395 30202 can be used here.

Playback track 1 of disc 4822 397 30096. (Disc without defects).

Connect a D.C. voltmeter between the **negative** of the focus motor and earth of the preamplifier print.

Adjust the height of the turntable with bearing screw 51 in such a way, that the voltage is  $0\text{ V} \pm 100\text{ mV}$ . Seal hereafter the screw with sealing paint.

### Checking the angle setting



Place mirror 4822 395 90205 on the objective and glass disc 4822 395 90204 (with disc hold-down 4822 532 60906) on the turntable.

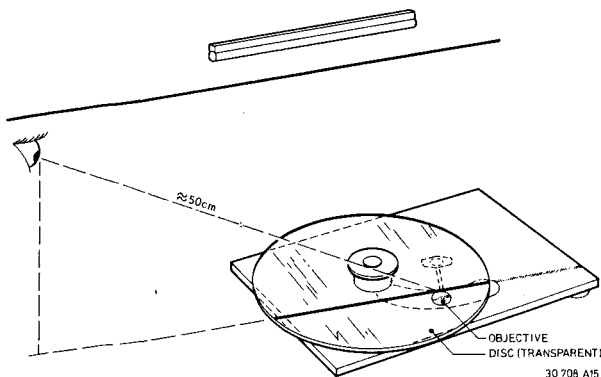
Locate the unit under a light source and under this light source a straight line should run (e.g. fluorescent tube with grid).

Set the arm to mid-position. Turn the unit until the arm is parallel to the line under the light source (see Fig.).

Look in the direction and in the prolongation of this line to its reflection on glass disc and mirror.

These lines should not be more than 4 mm apart:

Position the set in such a way that one line runs across the centre of the mirror. When the other line remains inside the mirror's surface, the distance is  $\leq 4\text{ mm}$ .



Rotate the CD mechanism through  $90^\circ$  relative to the previous position.

The arm must be kept in mid-position (see Fig.).

Repeat the previous measurement.

### Adjusting the angle setting

With respect to the adjustment of the angle between disc and light path, the factory has looked for a compromise between minimum angle deviation and minimum arm friction.

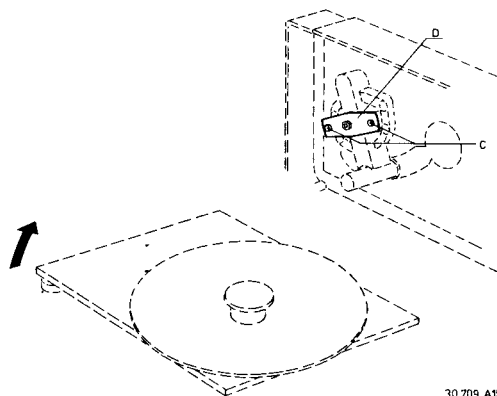
If the measurements show that the angle falls outside the tolerance given, the angle should NOT be adjusted for minimum deviation, but just within tolerance. The new setting should lie between the "old" setting and the optimum setting.

After adjustment, the friction of the arm should be checked. This is done by means of a spring-pressure gauge which is connected to the counterweight. The friction of the arm, measured over the total scanning deflection, is not allowed to exceed 30 mN.

When the friction appears to be too high, the angle should be reset to its old value. Then replace the arm by a new one and check the angle once more.

Adjustment of the angle is performed as follows:

Place the set on the servicing supports 4822 395 30202.



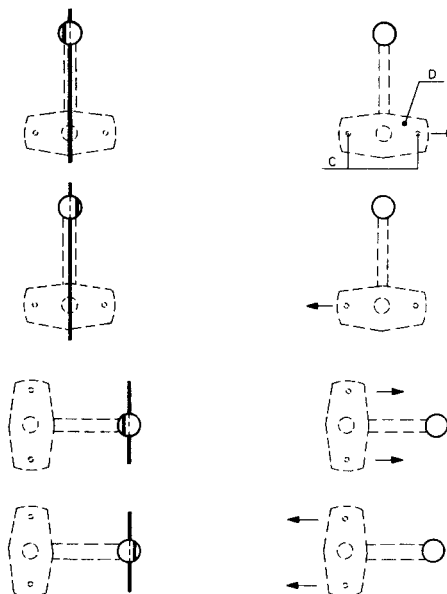
Loosen screws C (see Fig.) until bearing plate D can be shifted.

Correct the angle setting by shifting the bearing plate in the direction indicated on the Figure.

Tighten screws C ensuring that the setting does not drift. Double check the angle setting in two directions.

### Attention

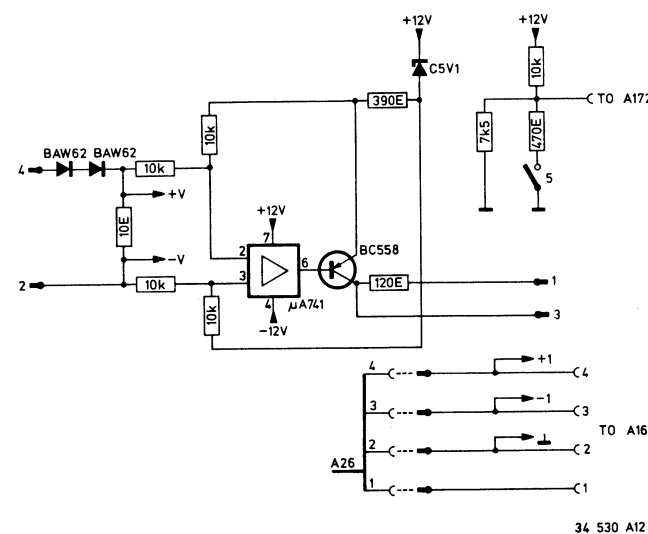
**After setting the angle, the height setting of the turntable should be checked.**



## ELECTRICAL MEASUREMENTS AND ADJUSTMENTS

## Laser power supply

Since the light pin is very sensitive to static charges, care should be taken that during measurements and adjustments of the laser power supply the potentials of aids and yourself equal the potential of the CD mechanism.



## Check

The laser simulator PCB nr. 3 (4822 395 30229) should be used here.

Take the flex PCB out of socket A11 and connect the switch simulator PCB with the socket. Remove plug A16 and insert it in the socket on the simulator PCB.

Connect the plug with 4 wires to socket A16. Take out plug A17 and insert the plug with 1 wire in socket A17.

Set the switch on the simulator PCB in the OFF position and the mains switch in the ON position.

Turn trimming resistor 3140 clockwise (max. R) and measure the voltage between points +V and -V on the simulator PCB.

The voltage should be  $\leq 15$  mV.

## Check of laser supply control:

Set the switch on the simulator PCB in the ON position and measure the voltages between points +v and -v on the simulator PCB.

Resistor 3140 clockwise (max. R):

$U +v -v = 225 \text{ mV} \pm 45 \text{ mV}$ .

Resistor 3140 counterclockwise (min. R):

$U +v -v = 750 \text{ mV} \pm 150 \text{ mV}$ .

Set resistor 3140 in mid-position.

This is a preliminary adjustment. After the simulator PCB has been removed the laser current must be adjusted. (see service manual CD player).

## Adjusting the focus bandwidth

(see service manual CD player).

## Checking the AGC and offset circuit

(see service manual CD player).

## Motor-control check (Hall)

- 1 Remove connector A09 from the motor PCB on the CDM.
- 2 Connect channel A of a dual-beam oscilloscope to the emitter of transistors 6082, 6083 and channel B to the emitter of transistors 6084, 6085.  
Position of oscilloscope: 2 V/div — 10 ms/div.
- 3 Connect pin 1 of connector A09 on the motor PCB to the ground of the set.
- 4 Switch the set on.
- 5 Apply a **negative** voltage to pin 2 of connector A09. The voltage may **not** be applied until **after** the circuit has been connected to power supply voltage. Start from 0 V and slowly proceed to -5 V. Now the motor should run.  
When the motor runs the voltage can be brought to approx. -2.5 V. The motor should continue to run then.
- 6 The oscilloscope should display sinusoid signals now (see Fig. A).  
After approx. 2 s they should lie symmetrically round the 0-axis and be shifted 90° relative to each other. The maximum ratio of the amplitudes of these 2 signals is allowed to be 1:2.
- 7 The amplitude depends on the applied voltage.  
The V-in/V-out pp ratio should lie between 1:2 and 1:3.
- 8 Determine at which V-in the motor runs at 600 rpm.  
At 600 rpm the frequency of V-out is 30 Hz.  
At this speed V-in should lie between -1.5 V and 3.7 V.

## Conclusion:

When all these conditions are present motor and PCB may be considered in order.

If points 5, 6 and 7 are not correct, the fault should most probably be found in the electronics.

If points 5, 6 and 7 are correct and the voltage to be applied at point 8 is e.g. -4.5 V to obtain a motor speed of 600 rpm, there will most probably be something wrong mechanically. E.g. the bearing friction is too high.

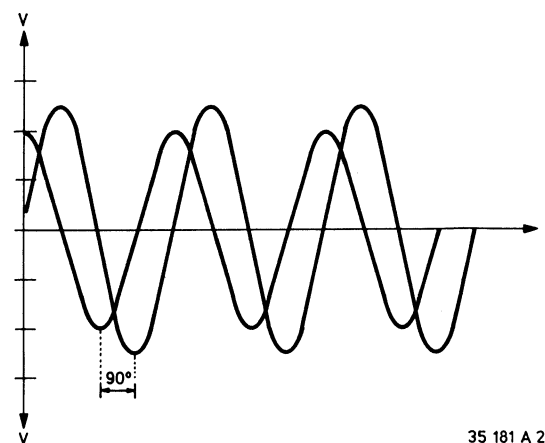
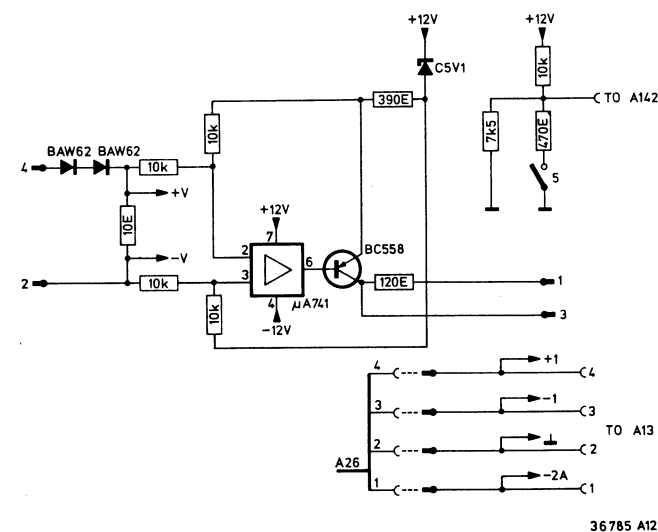


Fig. A

## ELECTRICAL MEASUREMENTS AND ADJUSTMENTS

## Laser power supply

Since the light pin is very sensitive to static charges, care should be taken that during measurements and adjustments of the laser power supply the potentials of aids and yourself equal the potential of the CD mechanism.



## Check

The laser simulator PCB nr. 4 (4822 395 30244) should be used here.

Take the flex PCB out of socket A11 and connect the switch simulator PCB with the socket.

Remove plug A13 and insert it in the socket on the simulator PCB.

Connect the plug with 4 wires to socket A13. Take out plug A14 and insert the plug with 1 wire in socket A14.

Set the switch on the simulator PCB in the OFF position and the mains switch in the ON position.

Turn trimming resistor 3140 clockwise (max. R) and measure the voltage between points +V and -V on the simulator PCB.

The voltage should be  $\leq 15$  mV.

## Check of laser supply control

Set the switch on the simulator PCB in the ON position and measure the voltages between points +v and -v on the simulator PCB.

Resistor 3140 clockwise (max. R):

$U +v -v = 225 \text{ mV} \pm 45 \text{ mV}$ .

R3140 counterclockwise (min. R):

$U +v -v = 750 \text{ mV} \pm 150 \text{ mV}$ .

Set resistor 3140 in the mid-position.

This is a preliminary adjustment. After the simulator PCB has been removed the laser current must be adjusted. (See Service Manual CD player).

## Adjusting the focus bandwidth

(See Service Manual CD player).

## Checking the AGC and offset circuit

(See Service Manual CD player).

## Motor-control check (Hall)

- 1 Desolder the wire from point C152 on the preamplifier printed panel on the C.D.M.
- 2 Connect channel A of a dual-beam oscilloscope to the emitter of transistors 6082, 6083 and channel B to the emitter of transistors 6084, 6085.  
Position of oscilloscope: 2 V/div — 10 ms/div.
- 3 Switch the set on.
- 4 Apply a **negative** voltage to the wire desoldered. The voltage may **not** be applied until **after** the circuit has been connected to power supply voltage. Start from 0 V and slowly proceed to -5 V. Now the motor should run.  
When the motor runs the voltage can be brought to approx. -2.5 V. The motor should continue to run then.
- 5 The oscilloscope should display sinusoid signals now (see Fig. A).  
After approx. 2 s they should lie symmetrically round the 0-axis and be shifted 90° relative to each other. The maximum ratio of the amplitudes of these 2 signals is allowed to be 1:2.
- 6 The amplitude depends on the applied voltage.  
The V-in/V-out pp ratio should lie between 1:2 and 1:3.
- 7 Determine at which V-in the motor runs at 600 rpm.  
At 600 rpm the frequency of V-out is 30 Hz.  
At this speed V-in should lie between -1.5 V and 3.7 V.

## Conclusion:

When all these conditions are present motor and PCB may be considered in order.

If points 4, 5 and 6 are not correct, the fault should most probably be found in the electronics.

If points 4, 5 and 6 are correct and the voltage to be applied at point 7 is e.g. -4.5 V to obtain a motor speed of 60 rpm, there will most probably be something wrong mechanically. E.g. the bearing friction is too high.

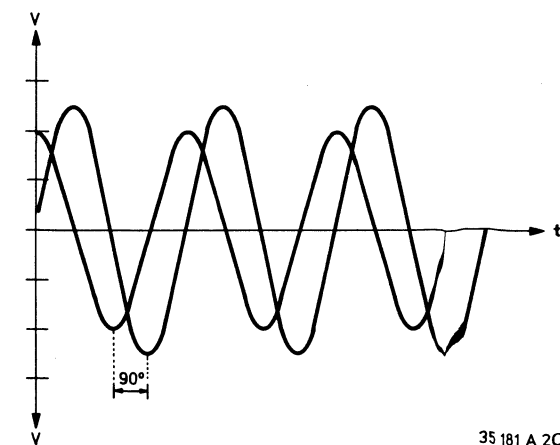
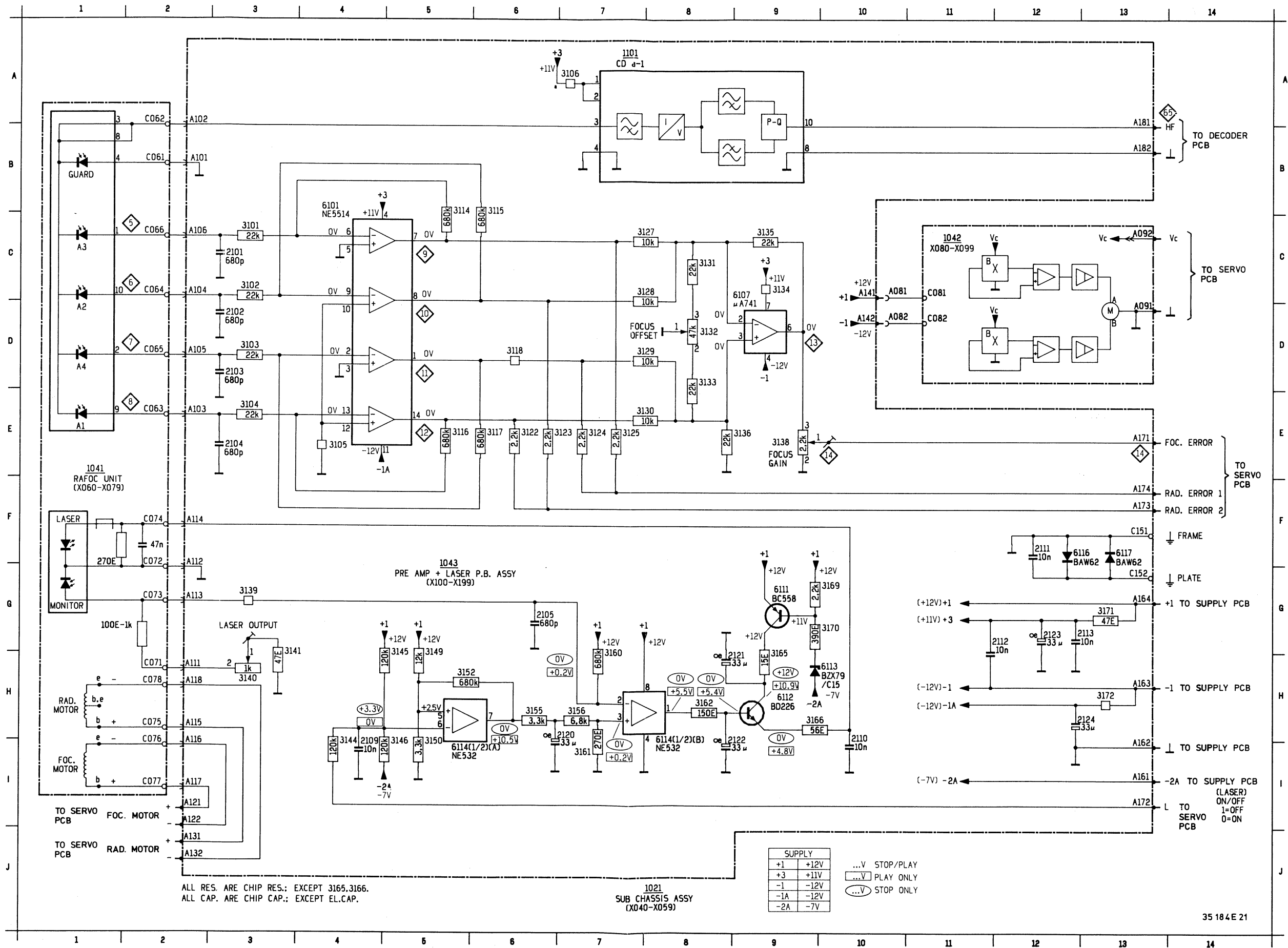
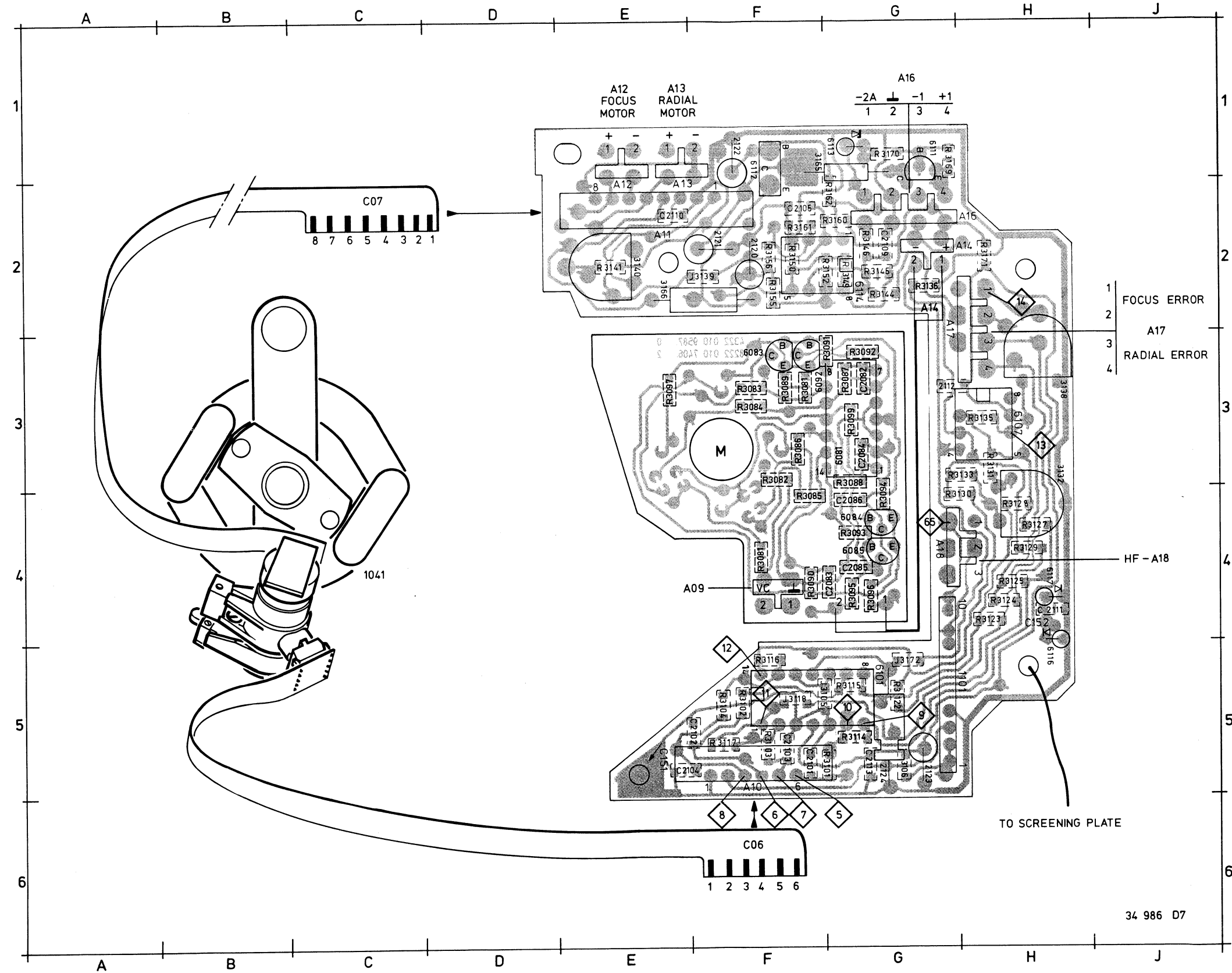


Fig. A

|      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |             |     |           |
|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|-------------|-----|-----------|
| 1101 | A 7 | 2104 | E 3 | 2111 | F12 | 2121 | H 9 | 3101 | C 3 | 3105 | E 4 | 3116 | E 5 | 3123 | E 7 | 3128 | C 8 | 3132 | D 8 | 3136 | E 9 | 3141 | G 3 | 3149 | G 5 | 3156 | H 7 | 3165 | G 9 | 3171 | G13 | 6111        | G 9 | 6114(1) 5 |
| 2101 | C 3 | 2105 | G 6 | 2112 | G12 | 2122 | H 9 | 3102 | C 3 | 3106 | A 7 | 3117 | E 6 | 3124 | E 7 | 3129 | D 8 | 3133 | D 8 | 3138 | E 9 | 3144 | I 4 | 3150 | I 5 | 3160 | G 7 | 3166 | H 9 | 3172 | H13 | 6112        | H 9 | 6116 F13  |
| 2102 | D 3 | 2109 | I 4 | 2113 | G13 | 2123 | G12 | 3103 | D 3 | 3114 | B 5 | 3118 | D 6 | 3125 | E 7 | 3130 | E 8 | 3134 | C 9 | 3139 | G 3 | 3145 | G 5 | 3152 | H 5 | 3161 | I 7 | 3169 | G10 | 6101 | B 4 | 6113        | H10 | 6117 F13  |
| 2103 | D 3 | 2110 | H10 | 2120 | H 7 | 2124 | H13 | 3104 | E 3 | 3115 | B 6 | 3122 | E 6 | 3127 | C 8 | 3131 | C 8 | 3135 | C 9 | 3140 | H 3 | 3146 | I 5 | 3155 | H 6 | 3162 | H 8 | 3170 | G10 | 6107 | C 9 | 6114(1) H 8 |     |           |

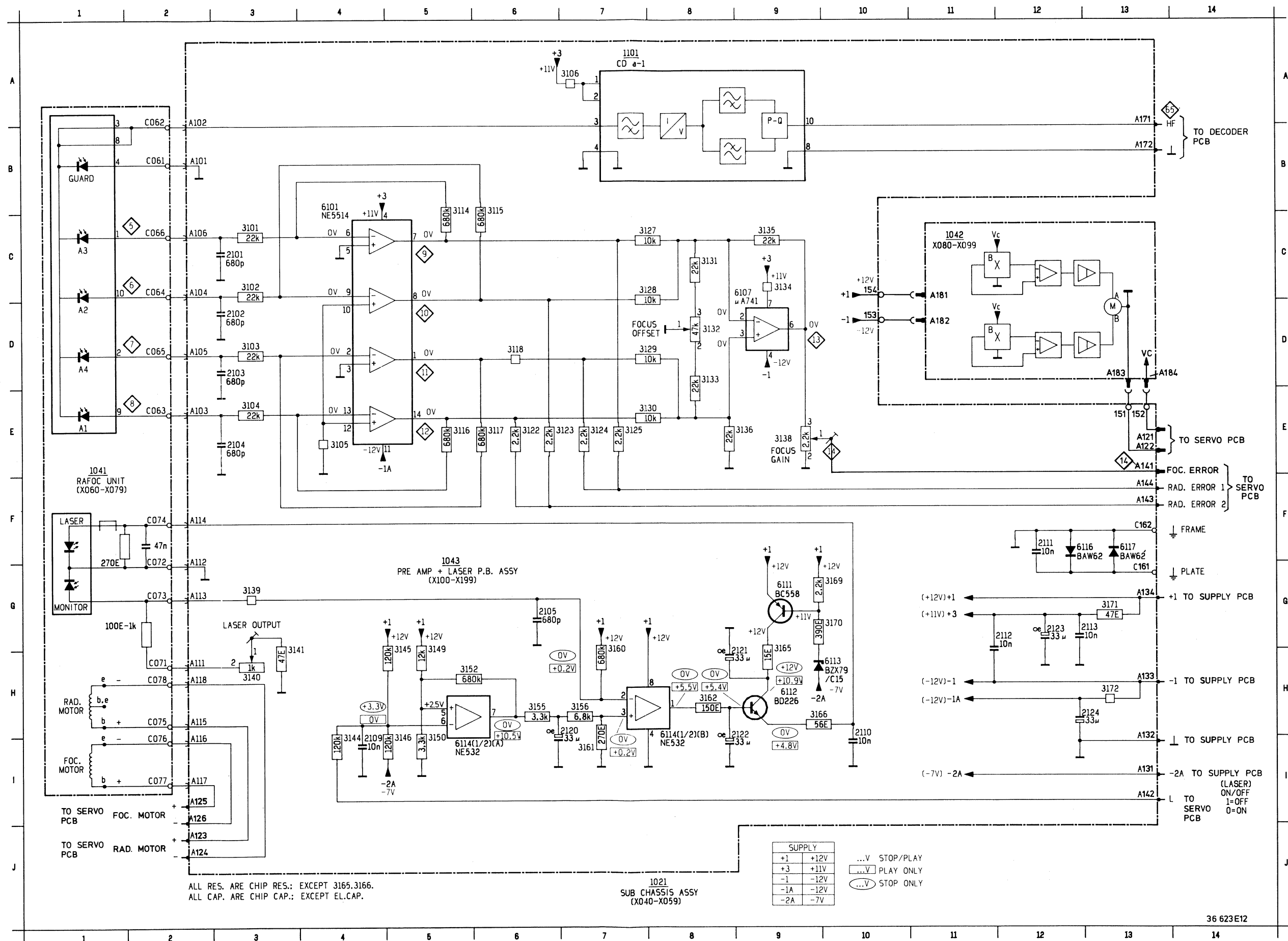


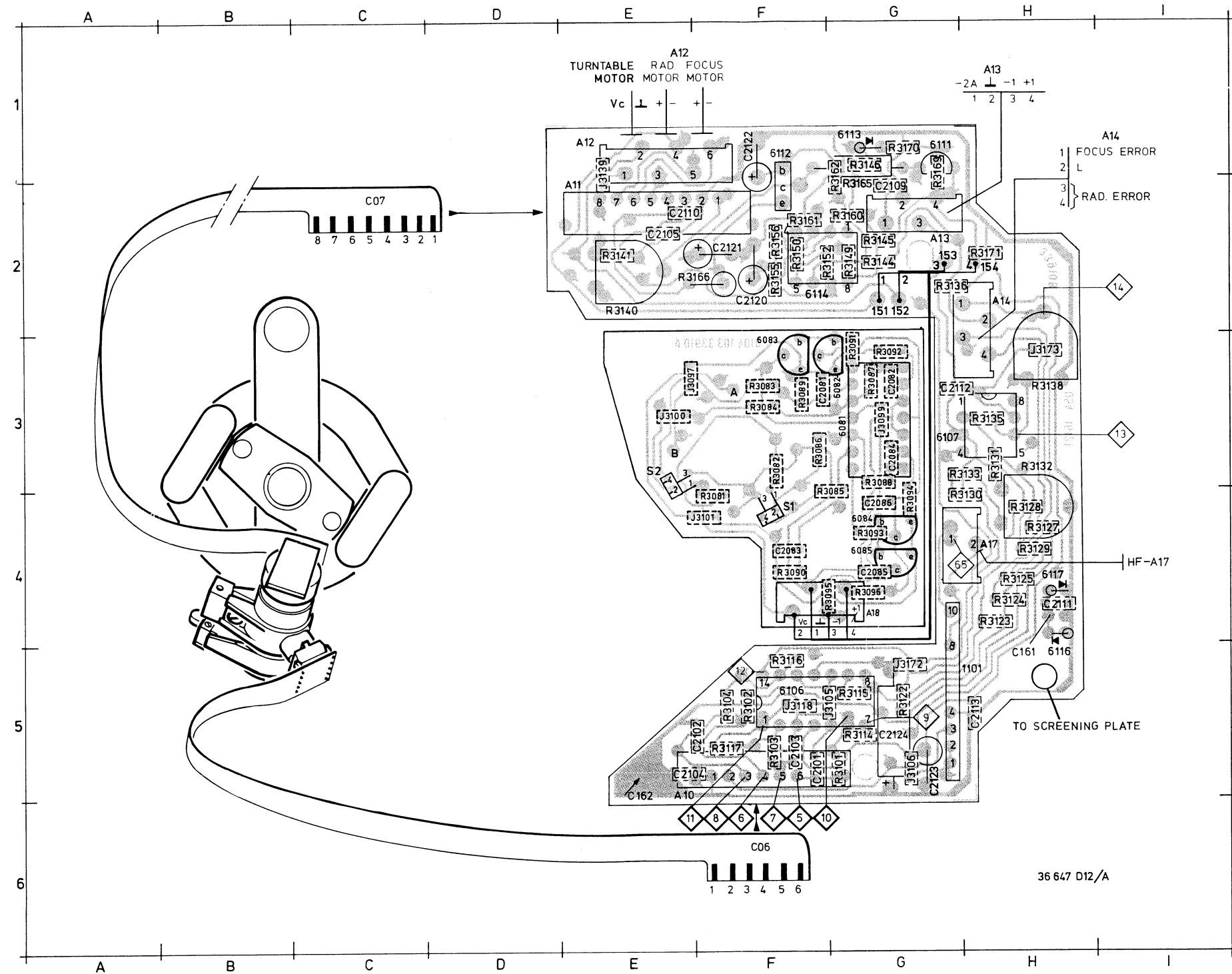


| UNIT                                                   |                    |                |
|--------------------------------------------------------|--------------------|----------------|
| 1101                                                   | Thick film unit HF | 4822 218 10157 |
| <div>NE532N</div> <div>NE5514N</div> <div>μA714N</div> |                    |                |
| <div>BC558</div> <div>BD226</div>                      |                    |                |
| <div>BZX79-C15</div> <div>BAW62</div>                  |                    |                |
| 3132                                                   | 47k                | 4822 100 10583 |
| 3138                                                   | 2k2                | 4822 100 20116 |
| 3140                                                   | 1k                 | 4822 100 20115 |
| 3165                                                   | 15E MR30           | 5322 116 54914 |
| 3166                                                   | 56E PR37           | 5322 116 54929 |
| 0E                                                     |                    | 4822 111 90163 |
| 47E                                                    |                    | 4822 111 90217 |
| 150E                                                   |                    | 5322 111 90098 |
| 270E                                                   |                    | 4822 111 90154 |
| 390E                                                   |                    | 5322 111 90138 |
| 2k2                                                    |                    | 4822 111 90249 |
| 3k3                                                    |                    | 4822 111 90157 |
| 6k8                                                    |                    | 5322 111 90117 |
| 10k                                                    |                    | 4822 111 90249 |
| 12k                                                    |                    | 5322 111 90097 |
| 22k                                                    |                    | 4822 111 90251 |
| 120k                                                   |                    | 4822 111 90149 |
| 680k                                                   |                    | 4822 111 90488 |
| 680 pF                                                 |                    | 4822 122 31809 |
| 10 nF                                                  |                    | 4822 122 31728 |

|          |          |          |          |          |
|----------|----------|----------|----------|----------|
| 1101 G05 | 2133 G05 | 3102 F05 | 3133 H01 | 3169 G01 |
| 2082 G03 | 3081 F04 | 3103 F05 | 3135 H01 | 3170 G01 |
| 2083 F04 | 3082 F03 | 3104 F05 | 3136 G01 | 3171 H02 |
| 2084 G03 | 3083 F03 | 3105 F05 | 3138 H01 | 3172 G05 |
| 2085 G04 | 3084 F03 | 3106 G05 | 3139 F01 | 6081 G03 |
| 2086 G04 | 3085 F04 | 3114 G05 | 3140 E01 | 6083 F03 |
| 2101 F05 | 3086 F03 | 3115 G05 | 3141 E01 | 6084 G04 |
| 2102 F05 | 3087 G03 | 3116 F05 | 3144 G01 | 6085 G04 |
| 2103 F05 | 3088 G03 | 3117 F05 | 3145 G01 | 6092 F03 |
| 2104 F05 | 3089 F03 | 3118 F05 | 3146 G01 | 6101 G05 |
| 2105 F02 | 3090 F04 | 3122 G05 | 3149 G01 | 6107 H03 |
| 2109 G02 | 3091 F03 | 3123 H04 | 3150 F01 | 6111 G01 |
| 2110 F02 | 3092 G03 | 3124 H04 | 3152 G01 | 6112 F01 |
| 2111 H04 | 3093 G04 | 3125 H04 | 3155 F01 | 6113 G01 |
| 2112 G03 | 3094 G04 | 3127 H04 | 3156 F01 | 6116 H05 |
| 2113 G05 | 3095 G04 | 3128 H04 | 3160 G01 | 6117 H04 |
| 2120 F02 | 3096 G04 | 3129 H04 | 3161 F01 |          |
| 2121 F02 | 3097 F03 | 3130 H04 | 3162 G01 |          |
| 2122 F01 | 3099 G03 | 3131 H03 | 3165 G01 |          |
| 2124 G05 | 3101 F05 | 3132 H04 | 3166 F01 |          |

|      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |           |     |           |     |
|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|-----------|-----|-----------|-----|
| 1101 | A 7 | 2104 | E 3 | 2111 | F12 | 2121 | H 9 | 3101 | C 3 | 3105 | E 4 | 3116 | E 5 | 3123 | E 7 | 3128 | C 8 | 3132 | D 8 | 3136 | E 9 | 3141 | G 3 | 3149 | G 5 | 3156 | H 7 | 3165 | G 9 | 3171 | G13 | 6111      | G 9 | 6114(*I 5 |     |
| 2101 | C 3 | 2105 | G 6 | 2112 | G12 | 2122 | H 9 | 3102 | C 3 | 3106 | A 7 | 3117 | E 6 | 3124 | E 7 | 3129 | D 8 | 3133 | D 8 | 3138 | E 9 | 3144 | I 4 | 3150 | I 5 | 3160 | G 7 | 3166 | H 9 | 3172 | H13 | 6112      | H 9 | 6116      | F13 |
| 2102 | D 3 | 2109 | I 4 | 2113 | G13 | 2123 | G12 | 3103 | D 3 | 3114 | B 5 | 3118 | D 6 | 3125 | E 7 | 3130 | E 8 | 3134 | C 9 | 3139 | G 3 | 3145 | G 5 | 3152 | H 5 | 3161 | I 7 | 3169 | G10 | 6101 | B 4 | 6113      | H10 | 6117      | F13 |
| 2103 | D 3 | 2110 | H10 | 2120 | H 7 | 2124 | H13 | 3104 | E 3 | 3115 | B 6 | 3122 | E 6 | 3127 | C 8 | 3131 | C 8 | 3135 | C 9 | 3140 | H 3 | 3146 | I 5 | 3155 | H 6 | 3162 | H 8 | 3170 | G10 | 6107 | C 9 | 6114(*H 8 |     |           |     |



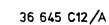


|      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |
|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
| 1101 | G05 | 2086 | G04 | 2105 | E02 | 2113 | H05 | 2124 | G05 | 3085 | F04 | 3090 | F04 | 3095 | G04 | 3103 | F05 | 3114 | G05 |
| 2082 | G05 | 2101 | F05 | 2109 | E02 | 2120 | F02 | 3081 | F03 | 3086 | F03 | 3091 | G03 | 3096 | G04 | 3102 | F05 | 3115 | G05 |
| 2083 | G04 | 2102 | F05 | 2110 | E02 | 2121 | F02 | 3082 | F03 | 3087 | G03 | 3092 | G03 | 3097 | G05 | 3104 | F05 | 3116 | F05 |
| 2084 | G03 | 2103 | F05 | 2111 | H04 | 2122 | F01 | 3083 | F03 | 3088 | G03 | 3093 | G04 | 3099 | G03 | 3105 | G05 | 3117 | F05 |
| 2085 | G04 | 2104 | E05 | 2112 | G03 | 2123 | G05 | 3084 | F03 | 3089 | F03 | 3094 | G04 | 3101 | G05 | 3106 | G05 | 3118 | F05 |
|      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |
| 3122 | G05 | 3128 | H04 | 3133 | H03 | 3142 | G02 | 3149 | G02 | 3160 | G02 | 3169 | G01 | 6081 | G03 | 6106 | F05 | 6114 | F02 |
| 3123 | H04 | 3129 | H04 | 3135 | H03 | 3141 | E02 | 3150 | F02 | 3161 | F02 | 3170 | G01 | 6083 | F03 | 6107 | H03 | 6116 | H04 |
| 3124 | H04 | 3130 | H04 | 3136 | G02 | 3144 | G02 | 3152 | G02 | 3162 | G01 | 3171 | G02 | 6084 | G04 | 6111 | G01 | 6117 | H04 |
| 3125 | H04 | 3131 | H03 | 3138 | H03 | 3145 | G02 | 3155 | F02 | 3165 | G01 | 3172 | G05 | 6085 | G04 | 6112 | F01 |      |     |
| 3127 | H04 | 3132 | H03 | 3139 | E01 | 3146 | G01 | 3156 | F02 | 3166 | F02 | 3173 | H03 | 6092 | F03 | 6113 | G01 |      |     |

| UNIT                                                                                  |                    |                |
|---------------------------------------------------------------------------------------|--------------------|----------------|
| 1101                                                                                  | Thick film unit HF | 4822 218 10157 |
|    |                    |                |
| NE532N                                                                                |                    | 4822 209 80818 |
| NE5514N                                                                               |                    | 4822 209 81451 |
| μA714N                                                                                |                    | 4822 209 80617 |
|    |                    |                |
| BC558                                                                                 |                    | 4822 130 40941 |
| BD226                                                                                 |                    | 5322 130 44244 |
|    |                    |                |
| BZX79-C15                                                                             |                    | 4822 130 34281 |
| BAW62                                                                                 |                    | 4822 130 30613 |
|    |                    |                |
| 3132                                                                                  | 47k                | 4822 100 10583 |
| 3138                                                                                  | 2k2                | 4822 100 20116 |
| 3140                                                                                  | 1k                 | 4822 100 20115 |
|   |                    |                |
| 3165                                                                                  | 15E MR30           | 5322 116 54914 |
| 3166                                                                                  | 56E PR37           | 5322 116 54929 |
|  |                    |                |
| 0E                                                                                    |                    | 4822 111 90163 |
| 47E                                                                                   |                    | 4822 111 90217 |
| 150E                                                                                  |                    | 5322 111 90098 |
| 270E                                                                                  |                    | 4822 111 90154 |
| 390E                                                                                  |                    | 5322 111 90138 |
| 2k2                                                                                   |                    | 4822 111 90249 |
| 3k3                                                                                   |                    | 4822 111 90157 |
| 6k8                                                                                   |                    | 5322 111 90117 |
| 10k                                                                                   |                    | 4822 111 90249 |
| 12k                                                                                   |                    | 5322 111 90097 |
| 22k                                                                                   |                    | 4822 111 90251 |
| 120k                                                                                  |                    | 4822 111 90149 |
| 680k                                                                                  |                    | 4822 111 90488 |
|  |                    |                |
| 680 pF                                                                                |                    | 4822 122 31809 |
| 10 nF                                                                                 |                    | 4822 122 31728 |



|      |     |      |     |
|------|-----|------|-----|
| 2101 | D02 | 3123 | D02 |
| 2081 | C04 | 3124 | D02 |
| 2082 | C04 | 3127 | E03 |
| 2083 | C03 | 3128 | E03 |
| 2084 | C04 | 3129 | E03 |
| 2085 | C03 | 3130 | D03 |
| 2086 | C03 | 3131 | D03 |
| 2101 | C01 | 3132 | E03 |
| 2102 | B02 | 3133 | D03 |
| 2103 | C01 | 3135 | D04 |
| 2104 | B01 | 3136 | D05 |
| 2105 | C05 | 3138 | E04 |
| 2109 | D05 | 3139 | B05 |
| 2110 | B05 | 3140 | B05 |
| 2111 | E02 | 3141 | B05 |
| 2112 | D04 | 3144 | D05 |
| 2113 | C01 | 3145 | D05 |
| 2120 | C05 | 3146 | C05 |
| 2121 | B05 | 3149 | C05 |
| 2123 | D01 | 3150 | C05 |
| 2124 | D02 | 3152 | C05 |
| 3081 | C03 | 3155 | C05 |
| 3082 | C03 | 3156 | C05 |
| 3083 | C04 | 3160 | C05 |
| 3084 | C04 | 3161 | C05 |
| 3085 | C03 | 3162 | C05 |
| 3086 | C04 | 3165 | C05 |
| 3087 | C04 | 3166 | B05 |
| 3088 | C03 | 3169 | D06 |
| 3090 | C03 | 3170 | D06 |
| 3091 | C04 | 3171 | D05 |
| 3092 | C04 | 3172 | D02 |
| 3093 | C03 | 6081 | C04 |
| 3095 | C03 | 6082 | C04 |
| 3096 | C03 | 6083 | C04 |
| 3097 | B04 | 6084 | C03 |
| 3098 | C04 | 6085 | C03 |
| 3099 | C04 | 6101 | E02 |
| 3101 | C01 | 6107 | D04 |
| 3102 | C02 | 6111 | D06 |
| 3103 | C01 | 6112 | C06 |
| 3104 | B02 | 6113 | C06 |
| 3105 | C02 | 6116 | E02 |
| 3106 | D01 | 6117 | E03 |
| 3114 | C02 |      |     |
| 3115 | C02 |      |     |
| 3116 | C02 |      |     |
| 3117 | B02 |      |     |
| 3118 | C02 |      |     |
| 3122 | D02 |      |     |



|      |     |      |     |
|------|-----|------|-----|
| 2101 | D02 | 3117 | B02 |
| 2081 | C04 | 3118 | C02 |
| 2082 | C04 | 3122 | D02 |
| 2083 | C03 | 3123 | D02 |
| 2084 | C04 | 3124 | D03 |
| 2085 | C03 | 3125 | D03 |
| 2086 | C03 | 3127 | E03 |
| 2101 | C01 | 3128 | E03 |
| 2102 | B02 | 3129 | E03 |
| 2103 | C02 | 3130 | D03 |
| 2104 | B01 | 3131 | D03 |
| 2105 | B05 | 3132 | E03 |
| 2109 | D05 | 3133 | D03 |
| 2110 | B05 | 3135 | D04 |
| 2111 | E03 | 3138 | E04 |
| 2112 | D04 | 3139 | B05 |
| 2113 | D02 | 3140 | B05 |
| 2120 | C05 | 3141 | B05 |
| 2121 | B05 | 3144 | C05 |
| 2122 | C05 | 3145 | C05 |
| 2123 | D02 | 3146 | C05 |
| 2124 | D02 | 3149 | C05 |
| 3081 | C03 | 3150 | C05 |
| 3082 | C03 | 3152 | C05 |
| 3083 | C04 | 3155 | C05 |
| 3084 | C04 | 3156 | C05 |
| 3085 | C03 | 3160 | C05 |
| 3086 | C04 | 3161 | C05 |
| 3087 | C04 | 3162 | C05 |
| 3088 | C03 | 3165 | C06 |
| 3090 | C03 | 3166 | B05 |
| 3091 | C04 | 3169 | D05 |
| 3092 | C04 | 3170 | D06 |
| 3093 | C03 | 3171 | D05 |
| 3094 | D03 | 3172 | D02 |
| 3095 | C03 | 3173 | E04 |
| 3096 | C03 | 6081 | C04 |
| 3097 | B04 | 6082 | C04 |
| 3098 | C04 | 6083 | C04 |
| 3099 | C04 | 6084 | C03 |
| 3101 | C01 | 6085 | C03 |
| 3102 | C02 | 6101 | C02 |
| 3103 | C02 | 6107 | D04 |
| 3104 | B02 | 6111 | D06 |
| 3105 | C02 | 6112 | C05 |
| 3106 | D01 | 6114 | C05 |
| 3113 | C06 | 6116 | E02 |
| 3114 | C02 | 6117 | E03 |
| 3115 | C02 |      |     |
| 3116 | C02 |      |     |

